

Three New Species of Muricacean Gastropods from the Eastern Pacific

BY

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(Plates 39, 40; 4 Text figures)

AS A RESULT OF OUR LONG-TERM investigation of the west American Muricacea, three new species, two referable to the Muricidae and one to the Coralliophilidae, recently came to our attention. We are indebted to Mr. and Mrs. André DeRoy of Santa Cruz Island, Galápagos Islands and Dr. James H. McLean of the Los Angeles County Museum of Natural History for making this material available for study.

Dr. George E. Radwin of the Natural History Museum of San Diego, California and Professor Masao Azuma of Nishinomiya, Japan kindly provided data on the radulae.

MURICIDAE

Murexiella radwini EMERSON & D'ATTILIO, spec. nov.

(Plate 39, Figures 1, 2; Text figure 2)

Description: The holotypic shell is 33.5 mm in length, with 7 convex postnuclear whorls; $2\frac{1}{2}$ unsculptured nuclear whorls are preserved on the smallest of the two immature paratypes. The surface of the shell is richly imbricated, especially on the projecting spines; and it is colored a warm fleshy violet. The aperture is moderately small, ovate; the columellar edge is slightly erect below, and the outer lip is strongly crenulated by the exterior spiral sculpture. The axial sculpture consists of 5 varices which are obliquely descending to the right. Six spiral cords are

present on the body whorl. The upper 3 are recurved; the lower 3 extend outwardly but are not recurved. There are 2 cords on the spire, which are spinose at the varices. The major spiral cords are composed of 1 major ridge and 2 to 3 minor continuous ridges on each side; their surfaces are overlaid by a continuous pattern of numerous tile-like flattened lamellae; at the outer edges of the ridges the lamellae develop into strong laterally projecting scales. In the area between the last two varices the spiral sculpture is much diminished. On the lower varices approaching the spiny extensions of the spiral cords, there are abrupt deep channels which strongly separate the major varical spines. On their apertural side the spines are open; between the spines, except for their distal projections, there are numerous, undulating, erect, blade-like lamellae. The narrowly opened siphonal canal is obliquely oriented to the left, is flattened for most of its length, and recurved only distally. The canal is ornamented on the right by 2 long spines and on the left by the ends of the previous siphonal canals; on the remaining area of the canal, there are present only growth striae.

The aperture within is colored lightly but richly violet. Exteriorly the shell is colored a fleshy violet except for the varices which are a pinkish tan.

No periostracum is apparent. The operculum is muricoid, with a basal nucleus. The radular dentition of the new species is illustrated (Text figure 2), and we are also illustrating (Text figure 1) the radular dentition of *Mu-*



Figure 1

Murexiella hidalgoi (CROSSE, 1869)

Central tooth and a lateral tooth, "Blake" Station 272, off Barbados (U. S. N. M. No. 87081); greatly enlarged

rexiiella hidalgoi (CROSSE, 1869; U. S. N. M. no. 87081), the type of the genus *Murexiella* CLENCH & FARFANTE, 1945. The radular slides of both species were kindly prepared by Dr. George E. Radwin, Curator, San Diego Natural History Museum.

Types: The holotype (A. M. N. H. no. 155903), which measures 33.5 mm in length, was dredged by André and Jacqueline DeRoy in 100 m at Tagus Cove, Isabella Island, Galápagos Islands, on January 29, 1968 (type local-

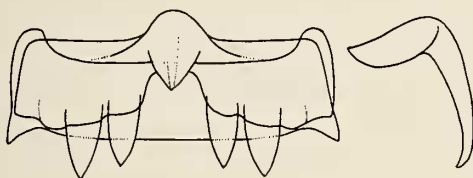


Figure 2

Murexiella radwini EMERSON & D'ATTILIO, spec. nov.

Central tooth and a lateral tooth from paratype (S. D. N. H. S. No. 51335); greatly enlarged

ity). In addition, the following parotypic material was studied: One immature specimen, height 16.8 mm (S. D. N. H. S. no. 51335), from which the radula was extracted; and a smaller immature specimen, height 13.5 mm (A. D'Attilio collection). Both paratypes were dredged from the same locality and on the same date as the holotype.

Remarks: This distinctive species is as yet known only from the material at hand. It is related most closely to *Murexiella hidalgoi* (CROSSE, 1869), of the western At-

lantic. Crosse's species has a narrower shell with longer spines. *Murexiella diomedaea* (DALL, 1908), from the eastern Pacific, has a slender, more spinose shell. Large specimens of *Murexiella humilis* (BRODERIP, 1833), especially those found in the Bay of Panama, have a more robust, heavier shell and differ also in the short, blunt, more recurved spines, and in other sculptural details.

"*Murex*" *galapaganus* EMERSON & D'ATTILIO, spec. nov.

(Plate 39, Figures 3 to 6; Text figures 3, 4)

Description: Shell is dull white, of moderate size (attaining 46+ mm in length). Whorls are 7, the early ones somewhat obscure through erosion, with 6 varices ornamented with long recurved spines. The whorls are subangulate, and, on the extended spire, there are 2

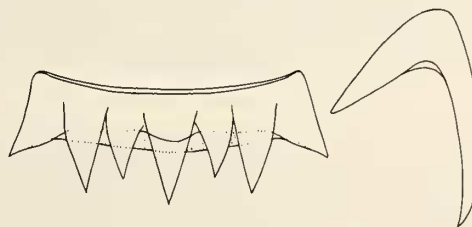


Figure 3

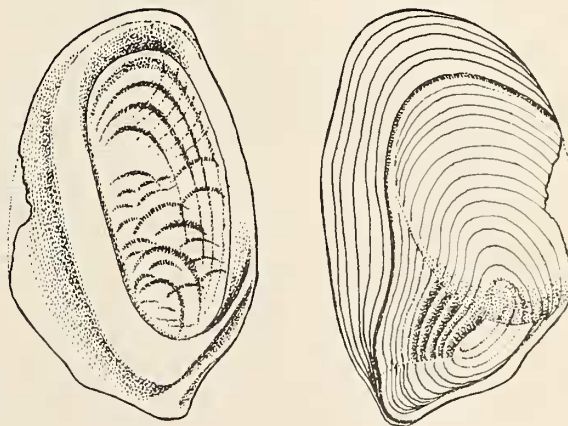


Figure 4

Figures 3 and 4

"*Murex*" *galapaganus* EMERSON & D'ATTILIO, spec. nov.

Figure 3: Central tooth and lateral tooth from a paratype (A. D'Attilio coll.); $\times 300$ (drawing courtesy of Prof. Azuma)

Figure 4: Operculum, outer and inner side; greatly enlarged

spiral cords, one on the shoulder and one above the impressed suture. On the body whorl there is a low rounded spiral cord on the shoulder, 2 low spiral cords appear below, and one additional, much weaker cord is just above the canal. The spines occur as extensions of the spiral cords at each axial varix. The axial varices extend over the shoulder diagonally as rounded, cord-like structures and are depressed midway, rising at their junction with the next whorl. The aperture is ovate, of moderate size and polished white; the edge of the apertural lip is elevated from the labial varix by a trough; the parietal lip is not free in the holotype due to immaturity. The largest, paratypic specimen (Plate 39, Figures 5, 6) has the parietal lip mostly erect and has 8 poorly developed apertural denticles on the outer lip.

One immature paratype (A. M. N. H. no. 155907) possesses $2\frac{1}{2}$ smooth, nuclear whorls.

Although not preserved on the holotype, possibly due to erosion, a thin outer layer of chalky matter occurs on the paratypes. This chalky material, which is microscopically striate, overlies the harder calcite surface.

The operculum has a terminal nucleus, situated sublaterally (Text figure 4). The radula is illustrated in Text figure 3.

Types: Holotype (A. M. N. H. no. 155906), dredged in 150 m, South Academy Bay, Santa Cruz Island, Galápagos Islands, June 11, 1968, collected by the DeRoys. Two paratypes (one in the DeRoy collection, length 43 mm; one in the D'Attilio collection, length 46 mm) from the same depth and locality, collected by the DeRoys, June 10, 1968 (type locality).

Other paratypic material: One immature specimen, A. M. N. H. no. 155907, dredged in 200 m, North Santa Cruz Island, collected by the DeRoys, December 9, 1968, 11.5 mm in length. One immature specimen, Los Angeles County Museum, Allan Hancock no. 816-38, north of Hood Island, Galápagos Islands, 15 mm in length.

Remarks: On the basis of our present knowledge, we can not assign with certainty this distinctive new species to an existing genus. In shell morphology, it is similar to the

type species of *Bathymurex* CLENCH & TURNER, 1945, and *Paziella* JOUSSEAUME, 1880, the radular characters of which are not known. On the other hand, the radular dentition of the type species of *Takia* KURODA, 1953 (p. 190; fig. 10 on p. 180) is morphologically close to that of the new species, but these taxa differ greatly in shell morphology, especially in the lack of spines on the shells of *Takia*. Both, however, have a chalky outer surface. Two species described from Japanese waters, "*Boreotrophon*" *gorgon* DALL, 1913 and "*B.*" *echinus* DALL, 1918 have similar opercula and radulae (Azuma, *in litt.*), but the shells lack well-produced spines and an outer chalky layer. Dall's taxa were placed in *Trophonopsis* BUCQUOY, DAUTZENBERG & DOLLFUS, 1882, by KURODA & HABE (1952), and were assigned to *Bathymurex* as a subgenus of *Trophonopsis* by AZUMA (1960). These species were subsequently assigned to *Paziella*, with *Bathymurex* as a synonym, by VOKES (1964). Thus, the new species could be placed in the Trophoninae, Muricinae, or with the aspella-like forms near *Takia*, depending on the generic assignment one would choose to select for it. Although the Galapagan specimens have a "trophonoid" appearance, we hesitate to place the new species generically until we have a better understanding of the taxonomic placement of these generic taxa. If the new species were to be referred to an existing genus on the basis of shell characters, *Paziella* would appear to be the most promising assignment.

CORALLIOPHILIDAE

Latiaxis (Babelomurex) santacruzensis
EMERSON & D'ATTILIO, spec. nov.

(Plate 40, Figures 1 to 4)

Description: Shell of medium size, light in structure; pale, ochre colored on its dorsum, aperture rosy pink: Nucleus in the holotype is lacking and the first and perhaps second whorl, in addition, are eroded. There follow 5 strongly carinated whorls each bearing on the carina

Explanation of Plate 39

Figures 1 and 2: *Murexiella radwini* EMERSON & D'ATTILIO, new species, holotype; $\times 2$

Figures 3 to 6: "*Murex*" *galapaganus* EMERSON & D'ATTILIO, new species

Figures 3, 4: Holotype (A. M. N. H. No. 155906); $\times 2$

Figures 5, 6: Paratype (D'Attilio collection) from type locality; $\times 2$



Figure 1



Figure 2



Figure 3



Figure 4



Figure 5



Figure 6

